

REMARKS

Claims 1, 2, 5-13, 16-24, 42-45 and 48-52 are all the claims pending in the application.

Applicants note that a number of editorial amendments have been made to the specification for grammatical and general readability purposes. No new matter has been added.

I. Claim Rejections under 35 U.S.C. § 102

The Examiner has rejected claims 1, 2, 5-13, 16-24, 42-45 and 48-52 under 35 U.S.C. § 102(e) as being anticipated by Aburakawa et al. (U.S. 2003/0007214).

Claim 1, as amended, recites the features of a plurality of sub-stations for forming respective wireless communication areas individually in the local area, and performing wireless communication with the wireless communication terminals in the respective corresponding wireless communication areas; a plurality of access relay apparatuses for converting signals to be input from an outside of the local area to an inside of the local area to a signal form for use in the local area, and converting signals to be output from the inside of the local area to the outside of the local area to a signal form for use in the outside of the local area; and a main station provided between the sub-stations and the access relay apparatuses. Applicants respectfully submit that Aburakawa does not disclose or suggest such a combination of features.

Regarding Aburakawa, Applicants note that this reference discloses a radio communication system which includes a control station 40, a plurality of base stations BS1-BS7, and a plurality of radio communication terminals MS1-MS2 (e.g., see Fig. 3 and paragraphs [0051]-[0053]). As explained in Aburakawa, the control station 40 and the base stations BS are connected by optical fibers in which optical signals are transmitted and received using a wavelength multiplexing transmission method (see paragraph [0051]).

For example, in Aburakawa, in each of the base-stations BS, a WDM coupler 55 splits off a wavelength specific for each base station BS from others, and an optical receiver 53 then receives the split off wavelength (see paragraph [0053]). Signals from the optical receiver 53 are radio-transmitted to a corresponding radio communication terminal MS via an antenna, wherein radio signals received from the radio communication terminals MS are converted into optical signals having an arbitrary wavelength by a variable-wavelength light source 54, and are then

combined by the WDM coupler 55 for wavelength multiplexing transmission to the control station 40.

As explained in connection with the first embodiment of Aburakawa, as shown in Fig. 3, when the communication terminal MS1 is communicating with the base station BS3, the base station BS3 uses a wavelength λ_{MS1} for transmitting the received information from the MS1 to the control station 40 (see paragraph [0055]). Then, when the communication terminal MS1 moves and starts to communicate with the base station BS4, the base station BS4 changes an output wavelength of the variable-wavelength light source 54 into the wavelength λ_{MS1} , and transmits signals thereafter, whereby the control station 40 can continue to receive signals having the wavelength λ_{MS1} (see paragraph [0055]).

As explained in connection with the second embodiment of Aburakawa, as shown in Fig. 5, when the communication terminal MS1 is communicating with the base station BS3, the control station 60 uses a wavelength λ_{BS3} for transmitting to the base station BS3 (see paragraph [0065]). Then, when the communication terminal MS1 moves and starts to communicate with the base station BS4, the control station 60 achieves a switching of base stations by changing a wavelength of the variable-wavelength light source 64 from λ_{BS3} to λ_{BS4} (see paragraph [0065]). Thus, in the second embodiment, the control station 60 switches to a new base station by controlling the wavelength of the variable-wavelength light source 64 (see paragraph [0065]).

In the Office Action, the Examiner has apparently taken the position that the control station 10 of Aburakawa corresponds to the "main station" of claim 1, and that the communication terminals MS of Aburakawa correspond to the "wireless communication terminals" of claim 1 (see Office Action at pages 2-3). Regarding the "sub-stations" of claim 1 and the "access relay apparatuses" of claim 1, however, it is not clear what position the Examiner is taking with respect to these claim elements.

In particular, with respect to the "sub-stations" of claim 1, the Examiner has cited to paragraphs [0001] and [0002] of Aburakawa which include a general description of base stations. Accordingly, it appears as though the Examiner is taking the position that the base stations BS of Aburakawa correspond to the "sub-stations" of claim 1.

With respect to the “access relay apparatuses” of claim 1, however, Applicants note that the Examiner has cited to paragraphs [0053] and [0063] Aburakawa which also include a description of the base stations. Accordingly, the Examiner appears to be taking the position that the base stations BS of Aburakawa also correspond to the “access relay apparatuses” of claim 1.

Applicants respectfully submit that it is clearly improper to take the position that the base stations BS of Aburakawa correspond to both of the “sub-stations” of claim 1 and the “access relay apparatuses” of claim 1.

For example, as noted above, the main station is claimed as being provided between the sub-stations and the access relay apparatuses. As such, it is clear that the base stations BS of Aburakawa cannot correspond to both of the sub-stations of claim 1 and the access relay apparatuses of claim 1.

In view of the foregoing, Applicants respectfully submit that Aburakawa does not disclose, suggest or otherwise render obvious the combination of “sub-stations”, “access relay apparatuses” and the “main station” as set forth in claim 1. Accordingly, Applicants submit that claim 1 is patentable over Aburakawa, an indication of which is kindly requested.

Furthermore, Applicants note that claim 1 recites the feature of a main station comprising a managing section operable to determine one of a plurality of access relay apparatuses to which a first one of the wireless communication terminals is accessible; and a selecting section operable to select and output one of the signals to be input from the outside of the local area, whose form is converted in the one of the plurality of access relay apparatuses determined by the managing section, and which is input to the local area, to the first wireless communication terminal via a corresponding one of the sub-stations.

Regarding this feature, as noted above, the Examiner has apparently taken the position that the control station (40 or 60) of Aburakawa corresponds to the “main station” of claim 1.

With respect to the control stations 40 and 60 of Aburakawa, however, Applicants respectfully submit that while the control station 40 is able to communicate with a communication terminal (e.g., MS1) when the communication terminal moves to a new base station without undergoing any switching operation (see paragraph [0055]), and the control station 60 is able to communicate with a communication terminal (e.g., MS1) when the

communication terminal moves to a new base station by controlling the wavelength of the variable-wavelength light source 64 (see paragraph [0065]), that neither the control station 40 nor the control station 60 has the ability to determine one of a plurality of access relay apparatuses to which a first one of the communication terminals is accessible, and select and output one of the signals to be input from the outside of the local area, whose form is converted in one of the plurality of access relay apparatuses determined by the managing section, and which is input to the local area, to a first wireless communication terminal via a corresponding sub-station.

In view of the foregoing, Applicants respectfully submit that Aburakawa does not disclose, suggest or otherwise the above-noted feature drawn to the main station comprising a managing section operable to determine one of a plurality of access relay apparatuses to which a first one of the wireless communication terminals is accessible; and a selecting section operable to select and output one of the signals to be input from the outside of the local area, whose form is converted in the one of the plurality of access relay apparatuses determined by the managing section, and which is input to the local area, to the first wireless communication terminal via a corresponding one of the sub-stations, as recited in amended claim 1.

Accordingly, Applicants submit that claim 1 is patentable over Aburakawa, an indication of which is kindly requested.

If the Examiner maintains the rejection of claim 1 based on Aburakawa, Applicants kindly request that the Examiner explicitly identify the elements in Aburakawa (by referring to reference numbers) that are being relied upon as allegedly corresponding to each of the features recited in claim 1.

Claims 2, 5-13 and 16-23 depend from claim 1 and are therefore considered patentable at least by virtue of their dependency.

In addition, regarding claim 5, Applicants note that this claim recites the feature of a network switch that is provided between the access relay apparatuses and the network outside of the local area. In the Office Action, the Examiner has cited to various paragraphs of Aburakawa, but has not identified which element in Aburakawa allegedly corresponds to the "network switch" of claim 5.

Applicants respectfully submit that Aburakawa does not disclose or suggest the feature of a network switch as recited in claim 5. Accordingly, Applicants submit that claim 5 is patentable over Aburakawa, an indication of which is kindly requested. If the Examiner maintains the rejection of claim 5, Applicants kindly request that the Examiner explicitly identify the element (by reference number) in Aburakawa that is being relied upon as allegedly corresponding to the network switch.

Regarding claim 24, Applicants note that this claim is drawn to a system for enabling a plurality of wireless communication terminals present in a local area to communicate with a network outside the local area, the system comprising: a plurality of sub-stations for forming respective wireless communication areas individually in the local area, and performing wireless communication with the wireless communication terminals in the respective corresponding wireless communication areas; a plurality of access relay apparatuses for converting signals to be input from an outside of the local area to an inside of the local area to a signal form for use in the local area, and converting signals to be output from the inside of the local area to the outside of the local area to a signal form for use in the outside of the local area; and a main station provided between the sub-stations and the access relay apparatuses.

For at least similar reasons as discussed above with respect to claim 1, Applicants submit that Aburakawa does not disclose, suggest or otherwise render obvious such features.

Further, Applicants note that claim 24 recites that the main station comprises a multiplexing section operable to frequency-multiplex the signals converted by the plurality of access relay apparatuses to be input to the local area, and a selecting section operable to select and output the signals to be input to the local area, which have been multiplexed by the multiplexing section, to all of the sub-stations.

As noted above, the control station 40 of Aburakawa is able to communicate with a communication terminal (e.g., MS1) when the communication terminal moves to a new base station without undergoing any switching operation (see paragraph [0055]), and the control station 60 is able to communicate with a communication terminal (e.g., MS1) when the communication terminal moves to a new base station by controlling the wavelength of the variable-wavelength light source 64 (see paragraph [0065]). Applicants respectfully submit,

however, that neither the control station 40 nor the control station 60 frequency-multiplexes signals converted by a plurality of access relay apparatuses to be input to the local area, and selects and outputs the signals to be input to the local area, which have been multiplexed by the multiplexing section, to all of the sub-stations, as recited in claim 24.

In view of the foregoing, Applicants submit that claim 24 is patentable over Aburakawa, an indication of which is kindly requested.

Regarding claim 42, Applicants note that this claim is drawn to a main station, provided between a plurality of sub-stations for forming respective wireless communication areas in a local area and performing wireless communication with a plurality of wireless communication terminals in the respective wireless communication areas, and a plurality of access relay apparatuses for outputting signals to be input from an outside of the local area to an inside of the local area, the main station comprising a managing section operable to determine one of the plurality of access relay apparatuses to which a first one of the wireless communication terminals is accessible, and a selecting section operable to select and output the signals to be input to the local area which have been received by the access relay apparatuses.

For at least similar reasons as discussed above with respect to claim 1, Applicants submit that Aburakawa does not disclose, suggest or otherwise render obvious such a combination of features. Accordingly, Applicants submit that claim 42 is patentable over Aburakawa, an indication of which is kindly requested.

Regarding claim 43, Applicants note that this claim is drawn to a main station, provided between a plurality of sub-stations for forming respective wireless communication areas in a local area and performing wireless communication with a plurality of wireless communication terminals in the respective wireless communication areas, and a plurality of access relay apparatuses for outputting signals to be input from an outside of the local area to an inside of the local area, the main station comprising a signal receiving section operable to receive the signals to be input to the local area which have been received by the access relay apparatuses; a multiplexing section operable to frequency-multiplex the signals to be input to the local area, the signals being received by the signal receiving section; and a selecting section operable to select

and output the signals to be input to the local area which have been multiplexed by the multiplexing section, to all of the sub-stations.

For at least similar reasons as discussed above with respect to claim 24, Applicants submit that Aburakawa does not disclose, suggest or otherwise render obvious such a combination of features. Accordingly, Applicants submit that claim 43 is patentable over Aburakawa, an indication of which is kindly requested.

Regarding claim 44, Applicants note that this claim is drawn to a sub-station for use in a wireless communication system, wherein the sub-station forms a wireless communication area in a local area, and communicates with a wireless communication terminal present in the wireless communication area formed by the sub-station, wherein in the wireless communication system, signals to be input from an outside of the local area to an inside of the local area are converted by a plurality of access relay apparatuses to a signal form for use in the local area, and one of the signals is selected and output to the sub-station.

As discussed above, Aburakawa discloses a control station (40 or 60), a plurality of base stations BS, and a plurality of communication terminals MS. For at least similar as discussed above with respect to claim 1, Applicants respectfully submit that Aburakawa does not disclose or suggest the features of a sub-station that forms a wireless communication area in a local area, and communicates with a wireless communication terminal present in the wireless communication area formed by the sub-station, wherein in the wireless communication system, signals to be input from an outside of the local area to an inside of the local area are converted by a plurality of access relay apparatuses to a signal form for use in the local area, and one of the signals is selected and output to the sub-station.

Accordingly, Applicants submit that claim 44 is patentable over Aburakawa, an indication of which is kindly requested. Claims 45 and 48-50 depend from claim 44 and are therefore considered patentable at least by virtue of their dependency.

Regarding claim 51, Applicants note that this claim recites that in a system comprising a plurality of sub-stations for forming respective wireless communication areas individually in the local area, and performing wireless communication with a plurality of wireless communication terminals in the respective corresponding wireless communication areas, a plurality of access

relay apparatuses for converting signals to be input from an outside of the local area to an inside of the local area to a signal form for use in the local area, and converting signals to be output from the inside of the local area to the outside of the local area to a signal form for use in the outside of the local area, and a main station provided between the sub-stations and the access relay apparatuses, a method performed by the main station comprises determining one of the plurality of access relay apparatuses to which a first one of the wireless communication terminals is accessible; and selecting and outputting one of the signals to be input from the outside of the local area, whose form is converted in the one of the plurality of access relay apparatuses having been determined, and which is input to the local area, to the first wireless communication terminal via a corresponding one of the sub-stations.

For at least similar reasons as discussed above with respect to claim 1, Applicants submit that Aburakawa does not disclose, suggest or otherwise render obvious such a combination of features. Accordingly, Applicants submit that claim 51 is patentable over Aburakawa, an indication of which is kindly requested.

Regarding claim 52, Applicants note that this claim recites that in a system comprising a plurality of sub-stations for forming respective wireless communication areas individually in the local area, and performing wireless communication with a plurality of wireless communication terminals in the respective corresponding wireless communication areas, a plurality of access relay apparatuses for converting signals to be input from an outside of the local area to an inside of the local area to a signal form for use in the local area, and converting signals to be output from the inside of the local area to the outside of the local area to a signal form for use in the outside of the local area, and a main station provided between the sub-stations and the access relay apparatuses, a method performed by the main station comprises frequency-multiplexing the signals converted by the plurality of access relay apparatuses to be input to the local area, and selecting and outputting the signals to be input to the local area which have been multiplexed by the multiplexing section, to all of the sub-stations.

For at least similar reasons as discussed above with respect to claim 24, Applicants submit that Aburakawa does not disclose, suggest or otherwise render obvious such a

combination of features. Accordingly, Applicants submit that claim 52 is patentable over Aburakawa, an indication of which is kindly requested.

II. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may best be resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

Respectfully submitted,

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